ATTO Technology, Inc.

Tech Sheet

10 Gigabit Ethernet Network Interface Cards

FastFrame™ NS14
FastFrame™ NS12
FastFrame™ NS11

ATTO's FastFrame™ 10 Gigabit Ethernet Network Interface Cards provide maximum throughput for high bandwidth network connectivity for demanding IT and media and entertainment applications.

Industry Proven Technology

FastFrame 10GbE Network Interface Cards are built on an industry standard, Ethernet technology from Intel. The FastFrame NS14, NS12 and NS11 simplify networking administration, integrate seamlessly into existing environments and reduce the total cost of ownership by improving connection bandwidth and eliminating redundant network infrastructure components.

Flexible Connectivity Solutions

FastFrame 10GbE Network Interface Cards provide the most flexible and scalable connectivity for today's data center environments. By leveraging Data Center Bridging and support for software iSCSI initiators FastFrame network adapters offer the ability to support both local and storage area networks. With broad operating system support NS14, NS12 and NS11 offer optimized connectivy for high bandwidth environments.

Performance Engineered

FastFrame cards, with support for link aggregation and failover, offer redundancy and high availability for critical network applications. The FastFrame NICs provide industry-leading throughput and latency management with minimal CPU utilization and power consumption. With 10Gb/s data transfer rates and multiple offloads (IPsec, TCP, IPv4, UDP), FastFrame adapters are the premier connectivity choice for bandwidth-intensive applications such as data back-up and restoration, clustered computing, IP content delivery, medical imaging, and video rendering. With multi-core processors driving the need for higher bandwidth, FastFrame 10GbE network adapters deliver superior throughput to meet that need.

Advanced Network Management

FastFrame 10GbE Network Interface Cards provide a common foundation for both Ethernet and storage networks. The FastFrame Ethernet adapters leverage unified network investments and eliminate the need for multiple adapters and switches, while reducing power and cooling expenses. By providing multi-protocol support and leveraging 10Gb Converged Enhanced Ethernet links, FastFrame Network Interface Cards dramatically reduce the cost and complexity of a data center's cabling infrastructure.

Technical Features

- Quad, dual and single port configurations
- Up to 10Gb/s throughput per port
- High-performance x8 PCIe 2.0 bus
- Low profile (single and dual channel) or full height form factor
- Support for Data Center Bridging and software iSCSI initiators
- Driver support for Windows® , Linux and Mac® operating systems
- TCP, UDP and IPv4 checksum offloading, IPsec offloading and Tx/TCP segmentation offloading
- Load-balancing on multiple CPUs
- Minimized interrupts for low latency
- Industry's lowest power consumption
- 3-year standard product warranty

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10 Gigabit Ethernet Network Adapters

FastFrame™ NS14, NS12, NS11

Tech Sheet

Technical Specifications

Applications

FastFrame™ 10GbE Network Interface Cards combine the unparalleled performance of 10 Gigabit Ethernet, the lossless benefits of Enhanced Ethernet and robustness of software iSCSI initiators, to meet the performance and economic needs of today's growing data centers. The FastFrame NS14, NS12 and NS11 are ideal for applications that require low latency, high bandwidth data transfers, such as data back-up and restoration, video-on-demand and video streaming, medical imaging, and clustered databases.

General Features

- Intel Ethernet Controller #82599
- Data rate per port: 10GbE
- TCP, UDP and IPv4 checksum offloading
- Tx/TCP segmentation offload (Large Send Offload—LSO)
- IPsec offload
- Low latency interrupts
- MSI-X support Multiple Independent Queues (16 queues per port)
- Interrupt moderation
- Data Center Bridging (DCB) support
  -Priority-Based Flow Control 802.1Qbb rev.0
  -Enhanced Transmission Selection 802.1Qaz rev.0
  -Data Center Bridging (DCBX) 802.1Qaz rev.0 protocol
- Header splits and Replication in Receive
- Receive Side Scaling for multiple Rx queues
- Direct Cache Access (DCA) eliminates cache misses and reduces CPU load
- Interrupt levels INTA, MSI, MSI-X
- Plug and play specification support
- Time Sync for networked Ethernet equipment (IEEE 1588, 802.las)
- VMDq and next-generation VMDq QoS features
- IEEE 802.3 2005 flow control support
- Advanced Packet Filtering
- VLAN support with tag insertion and stripping
- PC-SIG SR-IOV Implementation (64 virtual functions per port)

Advanced Software Features

- Adaptive load balancing
- Teaming support
- IEEE802.3ad (link aggregation control protocol)
- PCIe Hot Plug/Active peripheral interconnect
- IEEE 802.1Q VLANs

User Benefits

- Multiple offloads for lower processor usage and increased throughput
- Reduced power, cooling and cabling costs
- Low total cost of ownership (TCO) with high bandwidth over a single link

Management Tools

- Easy system monitoring with Simple Network Management Protocol (SNMP) and Remote Network Monitoring (RMON) Statistic Counters
- Watchdog Timer for chip/driver status monitoring

External Connectivity

- Dual speed 10G/1G Four, two or one LC fiber-optic connectors
- Supports 10 G SFP + Cu for Direct Attach
- 2 LED indicators per port
- LED Indicators: LINK (solid), ACTIVITY (blinking), LINK SPEED (green = 10Gb, yellow = 1Gb)

Hardware Certifications and Network Standards

- IEE802.3ae: 10GBASE-SR, 10GBASE-LR
- SFF-8431: 10GSFP+Cu (a.k.a Direct Attach)
- 802.1 Qbb: Priority Flow Control
- 802.1 Qaz: Enhanced Transmission
- DCBX Protocol

Bus Specifications

- x8 PCI Express 2.0
- Supports PCI Express Base 2.0 and CEM Spec 2.0

Operating System Support

- Windows® Server 2003, 2008,
- Windows XP, Vista, 7
- Red Hat (RHEL) and SUSE (SLES) Linux
- Mac® OS X® 10.6, 10.7

Agency Approvals

- FCC Part 15 Subpart B
- EN55022: 2006 + A1: 2007, Class B
- EN55024: 1998 + A1: 2001 & A2: 2003

Compliance

- EN60950-1
- EN60825-1
- EN60825-2
- EU RoHS (2002/95/EC)

Environmental and Physical Specifications

- Operating environment: 0°C to 55°C (32°F to 131°F)
- Non operating environment: -40°C to 70°C (-40°F to 157°F)
- Airflow required: 100 lf/m
- Humidity: 5% to 95% non-condensing
- Power Consumption
  FFRM-NS14: 15.7W
  FFRM-NS12: 5.9W
  FFRM-NS11: 4.7W

Warranty

- 3 Year

Ordering Information

Phone: 716-691-1999

Quad Port: FFRM-NS14-000

Dual Port: FFRM-NS12-000

Single Port: FFRM-NS11-000

ATTO FastFrame NS14	
Ports	Quad Port
Bus Characteristics	x8 PCIe 2.0
Connector	LC Fiber Optic
Form Factor	Full Height
Transfer Rate	8GB/s (full-duplex)
Part Number	FFRM-NS14-000

ATTO FastFrame NS12	
Ports	Dual Port
Bus Characteristics	x8 PCIe 2.0
Connector	LC Fiber Optic
Form Factor	Low Profile
Transfer Rate	5GB/s (full-duplex)
Part Number	FFRM-NS12-000

ATTO FastFrame NS11	
Ports	Single Port
Bus Characteristics	x8 PCIe 2.0
Connector	LC Fiber Optic
Form Factor	Low Profile
Transfer Rate	2.5GB/s (full-duplex)
Part Number	FFRM-NS11-000

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Product features and specifications are subject to change without notice.